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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--------------------------------|-------------|----------------------|---------------------|------------------|
| 10/035,111 | 12/27/2001 | John M. Daly | TI-32944 | 1681 |
| 23494 | 7590 | 05/05/2004 | EXAMINER | |
| TEXAS INSTRUMENTS INCORPORATED | | | ARNOLD, ADAM | |
| P O BOX 655474, M/S 3999 | | | ART UNIT | |
| DALLAS, TX 75265 | | | PAPER NUMBER | |
| | | | 2671 | |

DATE MAILED: 05/05/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/035,111

Applicant(s)

DALY ET AL.

Examiner

Adam Arnold

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10,13,14 and 17-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10,13,14 and 17-22 is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

The examiner acknowledges the receipt and entry of the applicant's amendment.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gosper.

Referring to claim 1, Gosper discloses a method of detecting line crossover in a pair of lines (page 1, paragraph 2) comprising determining a starting and ending point for each line in the pair (page 1, paragraph 2); calculating a value for each line (page 1, paragraph 4); comparing the values for each line (page 1, paragraph 8); and detecting line crossover based on the comparison (page 1, paragraph 9). Gosper does not disclose determining an overlap interval. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to determine an overlap interval. One of ordinary skill in the art would have been motivated to do this because the calculations will be effective regardless of whether there is an overlap interval. At page 2, Gosper illustrates a situation where there is an overlap interval. From this, it can be inferred that the author is dealing with the situation where there is an overlap interval, and the situation where there is none would result in no crossing lines.

Referring to claim 2, Gosper discloses where each a point on each line in the pair of lines is characterized by an X and Y value (page 1, paragraph 2) and where there is an overlap interval

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defined as beginning at a smallest X value shared by the lines and the largest X value shared by the lines (see drawing, page 2).

Referring to claim 3, the remarks presented above with respect to claims 1 and 2 apply equally to this claim.

Referring to claim 4, the remarks presented above with respect to claims 1 and 2 apply equally to this claim.

Referring to claim 5, Gosper discloses comparing the Y value for a first line and a second line and comparing a second Y value for the first line and second line (page 1, paragraph 3).

Referring to claim 6, Gosper discloses where a crossover has occurred if $(Y1a \leq Y1b \text{ and } Y2a \geq Y2b)$ or $(Y1a \geq Y1b \text{ and } Y2a \leq Y2b)$ are true (page 1, paragraph 3).

3. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gosper in view of Douglas. Gosper does not disclose where one of the lines has an undefined slope (i.e. vertical). Douglas discloses an algorithm for intersection of lines where one of the lines is vertical (page 4, middle of the page). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to determine whether lines intersect when one of them is vertical. One of ordinary skill in the art would have been motivated to do this in order to make the crossing determination for this special case.

Referring to claim 8, Gosper does not disclose comparing a point Y2a, representing the Y value of the second line at the X value of the vertical line, with the Y value of a starting point of the vertical line and comparing Y2a with the Y value of an ending point of the vertical line.

Gosper does disclose where 2 line segments cross if the end points of one of the segments lies

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above and below the line defined by the other line segment. With the special case of the vertical line, there is no above or below. The same logic applies to both situations, however.

Referring to claim 9, the remarks presented above with respect to claim 8 apply equally to this claim.

Allowable Subject Matter

4. Claims 10, 13, 14 and 17-22 are allowed.
5. The following is an examiner's statement of reasons for allowance: The prior art does not anticipate, nor does it suggest, the system as claimed in claims 10, 13, 14 and 17-22. The prior art of record does not include a method for detecting an invalid polygon on a handheld computer device comprising input from a user on a graphical interface of a plurality of connected lines to define a polygon, selecting a pair of lines that do not share a common starting point, determining if the lines crossover and determining if the polygon is valid.

Response to Arguments

Applicant's arguments filed February 17, 2004 have been fully considered but they are not persuasive. The examiner does not agree with the applicant's contention that Gosper does not *use* an overlap interval. To the contrary, the examiner pointed out that Gosper illustrates an overlap interval at the top of page 2, even though this is not explicitly disclosed in the text. From this, it can be inferred that Gosper is dealing with the situation where there is an overlap interval.

The rejections to these claims stand.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Adam Arnold** whose telephone number is **703-305-8413**. The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:00 AM and 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman, can be reached at (703) 305-9798.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

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Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).



MARK ZIMMERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600